AMENDMENTS TO THE CLAIMS

The following is a complete listing of the claims, which replace all previous versions and listings of the claims.

1. (original) A reduced package volume electrical control or monitoring system comprising:

at least one electrical component configured to be coupled to external circuitry for controlling or monitoring an electrical load, the at least one electrical component having a first inner volume;

a thermal base sealed to the at least one electrical component to define a second inner volume generally parallel and immediately adjacent to the thermal base, the thermal base being made of a thermally conductive material and presenting a plurality of convective heat transfer elements on both inner and outer surfaces thereof; and

an air circulation system for forcing a flow of air within the system between the first and second inner volumes to dissipate heat generated by the at least one component during operation via the thermal base.

2. (original) The system of claim 1, comprising a plurality of components interconnected with one another, and wherein the air circulation system forces the flow of air to dissipate heat generated by more than one of the components during operation.

3. (original) The system of claim 1, wherein the air circulation system includes a fan and a plenum directing the flow of air between the first inner volume and the second inner volume.

4. (original) The system of claim 1, wherein the plurality of convective heat transfer elements on the inner surface of the thermal base includes pins extending from the base into the second inner volume.

5. (original) The system of claim 1, wherein the plurality of convective heat transfer elements on the outer surface of the base includes fins extending from the base.

6. (currently amended) The system of claim 5, wherein the fins extend into a recessed heat transfer region bounded by one or more mounting areas.

7. (original) The system of claim 1, wherein the plurality of convective heat transfer elements on the inner and outer surfaces of the thermal base are integral to the base.

8. (original) The system of claim 1, wherein the at least one electrical component includes an inverter drive.

9. (original) The system of claim 1, wherein the thermal base includes a seal for sealing the first inner and outer volumes within the system.

10. (original) The system of claim 1, wherein the thermal base includes integral mounting surfaces for supporting the system in service.

11. (original) A modular electrical control or monitoring system comprising:

a plurality of modular electrical components interconnected with one another and configured to be coupled to external circuitry for controlling or monitoring an electric motor, at least one of the electrical components having a first inner volume;

a thermal base sealed to the modular electrical components to define a second inner volume generally parallel and immediately adjacent to the thermal base, the thermal base being made of a thermally conductive material and presenting a plurality of convective heat transfer elements on both inner and outer surfaces thereof; and

an air circulation system including a fan and a plenum for directing a flow of air within the system between the first and second inner volumes to dissipate heat generated by the modular components during operation via the thermal base.

12. (original) The system of claim 11, wherein the plurality of convective heat transfer elements on the inner surface of the thermal base includes pins extending from the base into the second inner volume.

13. (original) The system of claim 11, wherein the plurality of convective heat transfer elements on the outer surface of the base includes fins extending from the base.

14. (currently amended) The system of claim 13, wherein the fins extend into a recessed heat transfer region bounded by one or more mounting areas.

15. (original) The system of claim 11, wherein the plurality of convective heat transfer elements on the inner and outer surfaces of the thermal base are integral to the base.

16. (original) The system of claim 11, wherein the at least one modular electrical component includes an inverter drive.

17. (original) A modular electrical control or monitoring system comprising:

a plurality of modular electrical components interconnected with one another and configured to be coupled to external circuitry for controlling or monitoring an electric motor, the electrical components including at least an inverter drive having a first inner volume;

a thermally conductive base sealing secured to the plurality of modular electrical components to define a second inner volume immediately adjacent to an inner surface of the base, a plurality of mounting surfaces for supporting the base and the plurality of electrical components in service, and a plurality of integral convective heat transfer elements extending from both inner and outer surfaces thereof from transferring heat from the second inner volume to the environment surrounding the thermal base; and

an air circulation system including a fan and a plenum for directing a flow of air within the system between the first and second inner volumes to dissipate heat generated by the inverter drive during operation via the thermal base.

18. (original) A modular electrical control or monitoring system comprising:

a plurality of modular electrical components interconnected with one another and configured to be coupled to external circuitry for controlling or monitoring an electric motor, the electrical components including at least an inverter drive having a first inner volume;

a thermally conductive base sealing secured to the plurality of modular electrical components to define a second inner volume immediately adjacent to an inner surface of the base, a plurality of mounting surfaces for supporting the base and the plurality of electrical components in service, and a plurality of integral convective heat transfer elements extending from both inner and outer surfaces thereof from transferring heat from the second inner volume to the environment surrounding the thermal base, the plurality of integral convective heat transfer elements including a plurality of pins extending into the second inner volume and a plurality of fins disposed between mounting surfaces on the outer surface of the base; and

an air circulation system including a fan and a plenum for directing a flow of air within the system between the first and second inner volumes to dissipate heat generated by the inverter drive during operation via the thermal base.

19. (currently amended) A modular electrical control or monitoring system comprising:

a thermally conductive base having a seal groove configured to receive a seal for sealing the base to a plurality of modular electrical components, a plurality of mounting surfaces for supporting the base and the plurality of electrical components in service, and a plurality of integral convective heat transfer elements extending from both inner and outer surfaces thereof ~~from~~ for transferring heat from a sealed inner volume directly adjacent to the inner surface thereof to the environment surrounding the thermal base, wherein the plurality of convective heat transfer elements on the outer surface of the base includes fins extending from the base into a recessed heat transfer region bounded by one or more mounting areas.

20. (currently amended) The system of claim 19, wherein the plurality of convective heat transfer elements on the inner surface of the thermal base includes pins extending from the base into the ~~second~~ sealed inner volume.

21. (canceled)

22. (canceled)

23. (original) A reduced package volume electrical control or monitoring system comprising:

at least one electrical component configured to be coupled to external circuitry for controlling or monitoring an electrical load, the at least one electrical component having a first inner volume;

a thermal base sealed to the at least one electrical component to define a second inner volume generally parallel and immediately adjacent to the thermal base, the thermal base being made of a thermally conductive material and presenting a plurality of convective heat transfer elements on both inner and outer surfaces thereof, the convective heat transfer elements on the inner surface of the thermal base being configured to provide convective heat transfer in both forced and natural convection modes, whereby air within the system is exchanged between the first and second inner volumes to dissipate heat generated by the at least one component during operation via the thermal base.

24. (original) The system of claim 23, wherein the convective heat transfer elements on the inner surface of the thermal base are configured to provide for air flow in a plurality of different directions.

25. (original) The system of claim 24, wherein the convective heat transfer elements on the inner surface of the thermal base include a plurality of pins forming columns and rows in transverse directions.

26. (original) A method for controlling or monitoring an electrical load comprising:

disposing a plurality of electrical components on a thermal base, at least one of the electrical components including a first inner volume, the thermal base being sealed to the plurality of electrical components to define a second inner volume generally parallel and immediately adjacent to the thermal base, the thermal base being made of a thermally conductive materials and presenting a plurality of convective heat transfer elements on both inner and outer surfaces thereof; and

circulating air between the first and second inner volumes to dissipate heat generated by the at least one modular component during operation via the thermal base.

27. (currently amended) The method of claim [[24]] 26, wherein air is circulated between the first and second inner volumes by a fan and directed to the second inner volume by a plenum disposed at least partially around the fan.

28. (currently amended) The method of claim [[27]] 26, wherein the plurality of convective heat transfer elements on the inner surface of the thermal base includes pins extending from the base into the second inner volume.

29. (currently amended) The ~~system~~ method of claim [[27]] 26, wherein the plurality of convective heat transfer elements on the outer surface of the base includes fins extending from the base.

30. (currently amended) The ~~system~~ method of claim 29, wherein the fins extend into a recessed heat transfer region bounded by one or more mounting areas.